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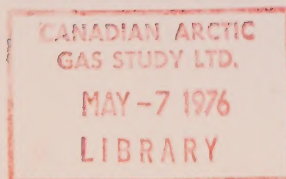
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RESPONSE OF THE N.W.T. FISH
AND WILDLIFE SERVICE
TO POPULATION GROWTH, EXPLORATION
AND INDUSTRIAL DEVELOPMENT

Presentation to the
Mackenzie Valley Pipeline Inquiry
by

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Historical Role of the N.W.T.

Fish and Wildlife Service

Unlike most other fish and wildlife conservation agencies in North America, the management programs of the N.W.T. Fish and Wildlife Service are designed primarily to satisfy the food and psychological requirements of indigenous people. It is a cliché in our profession that wildlife management is people management, yet nowhere is it more evident than in the N.W.T. where a majority are not far removed from living off the land.

The "field" personnel of the Service are organized into three Regions and one District (as is the entire N.W.T. Government), each supervised by a Superintendent. The Regions and District are divided into areas, each of which is assigned one or more Area Fish and Wildlife Officers. The part of the N.W.T. that concerns this hearing is covered by two Regions headquartered at Fort Smith and Inuvik. For the past several years those Regions have been served by 22 officers as shown in Table I. (Nine of the officers are F.W.O. I's who serve mainly as interpreters, field assistants, and maintenance-men.)

The Regional and District Superintendents report to the Superintendent of the Fish and Wildlife Service. They are served by an advisory staff of specialists based in Yellowknife.

The Area Fish and Wildlife Officers (AFWO's) are responsible for the success of a variety of programs designed to assist N.W.T. residents, a majority of whom are permitted by law to hunt, trap, and fish whenever and wherever



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they wish, to obtain the maximum benefit from fish and wildlife on a sustained-yield basis. They administer loans and grants to trappers, support Hunters and Trappers Associations, explore the fishery potential of lakes and streams, support organized caribou hunts, conduct trapper education courses, support the construction of base camps for hunters and trappers, assist with the harvest of sea mammals, provide and maintain two-way radio communications with hunters and trappers, and assist trappers with fur marketing. The AFWO's also issue a variety of licenses and permits, maintain liaison with schools and with other agencies, conduct hunter safety courses, train new personnel, and pursue the duties of law enforcement officers. Upon this load is placed the task of conducting basic wildlife surveys, mainly designed to determine and monitor the seasonal distribution and general abundance of mammals.

Staff specialists at Yellowknife design and often conduct major management studies. For example, the specialists have supervised test fisheries in the Mackenzie Delta and eastern Arctic, and have designed and conducted long-term studies of bison, polar bear, grizzly bear, and barrenland caribou. Staff specialists also co-operate through various committees and boards with habitat management agencies such as the Department of the Environment and the Department of Indian and Northern Affairs, design and recommend legislation governing the use of wildlife, provide administrative support to the field staff, design and supervise the new Outpost Camp Program, and respond to a myriad of demands, requests, complaints, and questions from an increasingly well-informed and outspoken public.

No habitat role.

Table I Communities served by Fish and Wildlife Officers as of March, 1976

<u>Fort Smith Region</u>		
<u>Station</u>	<u>Officer</u>	<u>Other Communities Served</u>
Ft. Rae	FWO III, FWO I	Lac la Martre, Rae Lakes, Rae-Edzo, Snare Lake
Hay River	FWO III	Enterprise, Kakisa Lake, Ft. Providence, Indian Cabins, Meander River
Ft. Simpson	FWO III, FWO I	Ft. Liard, Ft. Wrigley, Jean Marie River, Nahanni Butte, Tungsten, Trout Lake
Ft. Resolution	FWO II, FWO I	Rocher River, Pine Point
Ft. Smith	FWO III, FWO I	Fond du Lac, Stony Rapids, Uranium City
Yellowknife	FWO III, FWO I	Ft. Reliance, Echo Bay, Snowdrift, Contwoyto Lake
Cambridge Bay	FWO II	Holman Island, Bathurst Inlet, Coppermine
Spence Bay	FWO I	Gjoa Haven, Pelly Bay

Inuvik Region

Station	Officer	Other communities Served
Inuvik	FWO III, FWO II	Sachs Harbour, Paulatuk
Aklavik	FWO II, FWO I	Tuktoyaktuk
Ft. McPherson	FWO II, FWO I	Arctic Red River
Norman Wells	FWO III	Fort Norman
Fort Good Hope	FWO I	Colville Lake
Ft. Franklin	FWO II	-

The Expanding Responsibilities of the N.W.T.
Fish and Wildlife Service

Introduction

As a result of the rapid exploration and development of the North, particularly in the District of the Mackenzie, the responsibilities of the Fish and Wildlife Service are expanding faster than our ability to keep pace. Native organizations are more effectively explaining their needs to administrators who respond with improved and expanded programs (Hunters and Trappers Associations, for example) and with new programs (Outpost Camp and the marketing of sea mammal meat for example). Improved transportation allows hunters and trappers to go further afield more efficiently, to drive new roads and trails, to land on new airstrips, and therefore to exert greater pressures on wildlife populations that wildlife managers may know little about. Due to the great increase of mineral and petroleum exploration and development, the Service must review more and more applications for land and water use permits and research permits to insure that wildlife management concerns and the concerns of the user public are adequately considered. More transients in the North spell more wildlife law enforcement problems. More coordination in enforcement is required with conservation agencies in the Yukon and adjoining provinces.

The old Game Management Division has left the Department of Economic Development for the new Department of Natural and Cultural Affairs and has re-organized. It brought with it a fisheries development responsibility (thus the name change: Fish and Wildlife Service).

To clarify the following discussion, several terms must be defined. An "in-migrant" is a person who moves into an area in response to a "boom", and becomes a resident. An "in-migrant" does not intend to stay in the N.W.T. after the exploration and development activity which attracted him declines. He will be the pipeline construction worker and the pilot flying for the pipeline firm. A "native" is an Indian, Inuit, or Metis residing in the N.W.T. Of most interest to us is the fact that nearly all natives are entitled to hold General Hunting Licenses (GHL). "Non-natives" are N.W.T. residents not fitting the above categories. Most of them are not GHL holders.

Population Growth in the Mackenzie District

The growth in the non-native and in-migrant segments of the population of the N.W.T. have taxed our Service most severely. The growth in the non-native population spells an increase in the demand for our services relating to recreational hunting and wildlife law enforcement. An example of the change in the workload of a station as a result of growth in the non-native population can be found in Yellowknife. The non-native population in Yellowknife doubled in the last decade. Table II shows the percentage of a 37 1/2 hour work week as well as the number of man years that were spent at the Yellowknife station (one FWO I and one FWO III) on a variety of tasks before the boom in the non-native population, the percentages of the same workweek actually spent on the same tasks now, and the percentages of time we feel we should be spending on these tasks at present. Note that marked deficiencies are indicated in the areas of wildlife law enforcement and in general office administration.

Table II Fish and Wildlife Station workload distribution for the Yellowknife area.

Task	Workload division % of work week		
	Present	Pre-1966	Required for adequate performance
Resource harvesting assistance	50 (1.0)	60-70 (1.2-1.4)	50 (1.0)
Enforcement	50 (1.0)	5 (0.1)	70 (1.4)
Mgt. surveys	5 (0.1)	5 (0.1)	15 (0.3)
Administration	20 (0.4)	10-15 (0.2-0.3)	25 (0.5)
Equipment maint.	5 (0.1)	5-15 (0.1-0.3)	5 (0.1)
Total	130 (2.6)	[†] 100-120 (2-2.4)	165 (3.3)

--- In parenthesis: workload in man-years ---

The present workload is definitely an overload. An indicator of overload is the fact that the AFWO's are not available at their office four out of five days.

The future growth of the in-migrant population will result in an even greater demand for enforcement services, as well as an increase in administrative tasks such as license and permit issuing and the handling of complaints about land use regulation violations. An example of what an increase in the in-migrant population may do to a station workload can be found in Fort Simpson (Table III). One reflection of the increase in problems related to land use regulations alone is the increase in the ^{increased} Lands and Forest Service staff from 1 to 10 (including support personnel) in the Ft. Simpson area over the past 8 years, including the creation of an expanded office at Ft. Liard. A similar expansion has developed at the Inuvik Lands and Forest Service office (1 to 14).

Note the range between the time spent on enforcement duties before 1966, the time presently spent, and the estimated time our FWO's should spend for proper performance.

Table III Fish and Wildlife Station workload distribution for the Fort Simpson area.

Task	Workload division % of work week		
	Present	Pre-1966	Required for adequate performance
Resource harvesting assistance	70 (1.4)	60-70 (1.2-1.4)	65 (1.3)
Enforcement	15 (0.3)	5 (0.1)	50 (1.0)
Mgt. surveys	10 (0.2)	5 (0.1)	15 (0.3)
Administration	20 (0.4)	10-15 (0.2-0.3)	25 (0.5)
Equipment maint.	10 (0.2)	5-15 (0.1-0.3)	10 (0.2)
Total	125 (2.5)	[±] 100-120 (2-2.4)	165 (3.3)

--- In parenthesis: workload in manyears ---

The Delta area - Response to Growth

I am best prepared to discuss our Service's response to a rapid increase in exploration and development in the Mackenzie Delta area, mainly because of our recent participation in the Mackenzie Delta Regional Planning exercise.

There was an average 6.5% annual growth in population in the Delta area between 1961 and 1971 (native and non-native residents). Between 1966 and 1976, the N.W.T. Fish and Wildlife Service did not respond to this growth by a proportionate increase in staff. In 1966, one officer served 651 people; in 1971 one officer served 787 people; and presently one FWO serves 921 residents. This is a basic indicator of an increase in work load.

Figure 1 is a projection of Mackenzie Delta population growth (assuming construction of a gas pipeline), sub-divided into Native, Non-Native and In-Migrant categories. It shows the native population increasing at a slightly greater rate than the non-native resident population. It reflects, in the sharp increase of the in-migrant numbers, the tempo of mineral, gas, and oil exploration in the Delta since 1971, and the expected fluctuations of in-migrant numbers as a result of gas pipeline construction. The increase in the native population growth in itself may not seriously overload our Service at its present rate of expansion. The demands placed on our Service by natives may well be balanced by a decline in subsistence hunting and trapping.

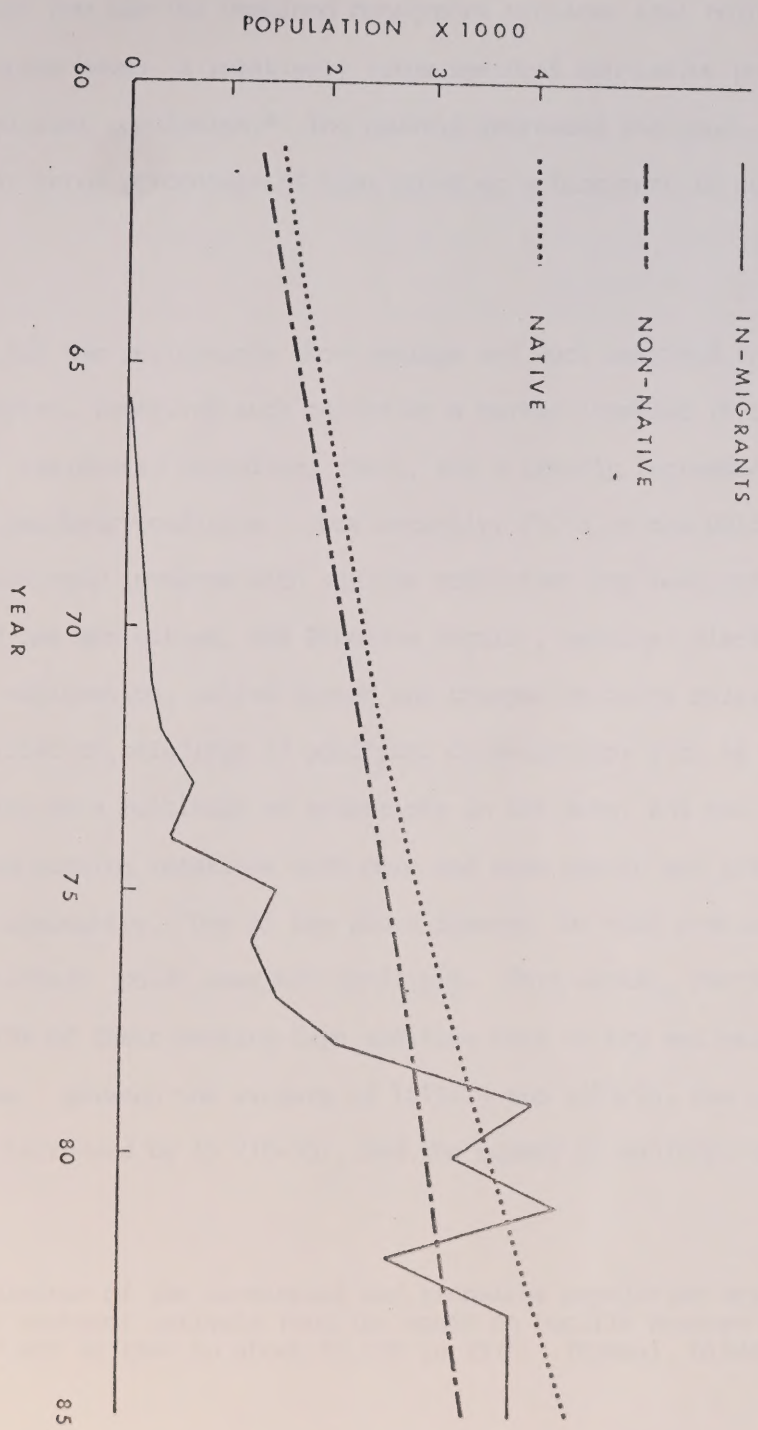


Figure 1. Population estimates and projection for the Mackenzie River Delta area, assuming construction of a gas pipeline.

The Delta area now has the combined management problems that both Yellowknife and Fort Simpson have: a relatively large resident non-native population and a large in-migrant population.* The greatly increased workload, and the comparatively large percentage of time spent on enforcement is evident in Table IV.

The reasons for the performance shortcomings and work overload in the Delta area are complex, involving such things as a marked increase in intersettlement movements by residents, vandalism, theft, and a greatly increased incidence of reported man/bear conflicts. More recently, FWO's in the Delta area have become increasingly involved with various committees and meetings having to do with land use activities, the Pipeline Inquiry, regional planning, offshore oil and gas exploration, native hunter and trapper concerns related to oil and gas exploration, briefings of political organizations such as COPE, provision of information to a multitude of scientists in the area, and the need to maintain good working relations with more and more public and private agencies in a "boom" atmosphere. One of the above reasons for work overload can be easily quantified: polar bear/man conflicts. This winter, FWO's in the Delta have spent 19% of their working days visiting rigs to try and help solve the bear problems. Between the winters of 1973/74 and 1975/76, the number of field trips increased by 15 (10-25), and the number of man/days spent on those

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* An indicator of the in-migrant and transient population activity in the Delta is the number of arrivals from the south on Pacific Western Airlines: from about 7,000 in 1966 to about 43,000 in 1975. (McNeal, Hildebrand & Assoc. Ltd., 1975).

Table IV Fish and Wildlife Station workload distribution for the Inuvik area.

Task	Workload division % of work week		
	Present	Pre-1966	Required for adequate performance
Resource harvesting assistance	50 (1.0)	60-70 (1.2-1.4)	65 (1.3)
Enforcement	60 (1.2)	5 (0.1)	80 (1.0)
Mgt. surveys	10 (0.2)	5 (0.1)	15 (0.3)
Administration	20 (0.4)	10-15 (0.2-0.3)	25 (0.5)
Equipment maint.	10 (0.2)	5-15 (0.1-0.3)	10 (0.2)
Total	150 (3.0)	⁺ 100-120 (2-2.4)	195 (3.3)

--- In parenthesis: workload in man-years ---

The existing and projected man/year requirement for the services of the Management Studies Section in the Delta area is shown in Fig. 2 as that area above the 0.3 man years normally expended on management studies by Area FWO's. The prediction takes into account the research conducted by the Canadian Wildlife Service and the numerous consulting firms and Universities working in the Delta. In the future, most of our management studies will be relatively short-term (one to three years) and will deal with specific problems of direct management applicability.

In Fig. 2, we have projected our man year requirements* if a gas pipeline is not under construction before 1979 or 1980 and our requirements for management studies if such construction begins before then. Our step-up in management studies should begin at least a year before construction starts. The management studies will involve determinations of general abundance and seasonal distribution of large mammals and furbearers, the monitoring of hunter kill, and the productivity and survival of large mammals. There will also be the task of monitoring the interaction between men, machinery, and wildlife populations, and the task of reviewing large numbers of water and land use applications and recommending research to fill in gaps in knowledge.

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*Possible involvement with management studies related to oil exploration and development in the Beaufort Sea is not shown in the graph.

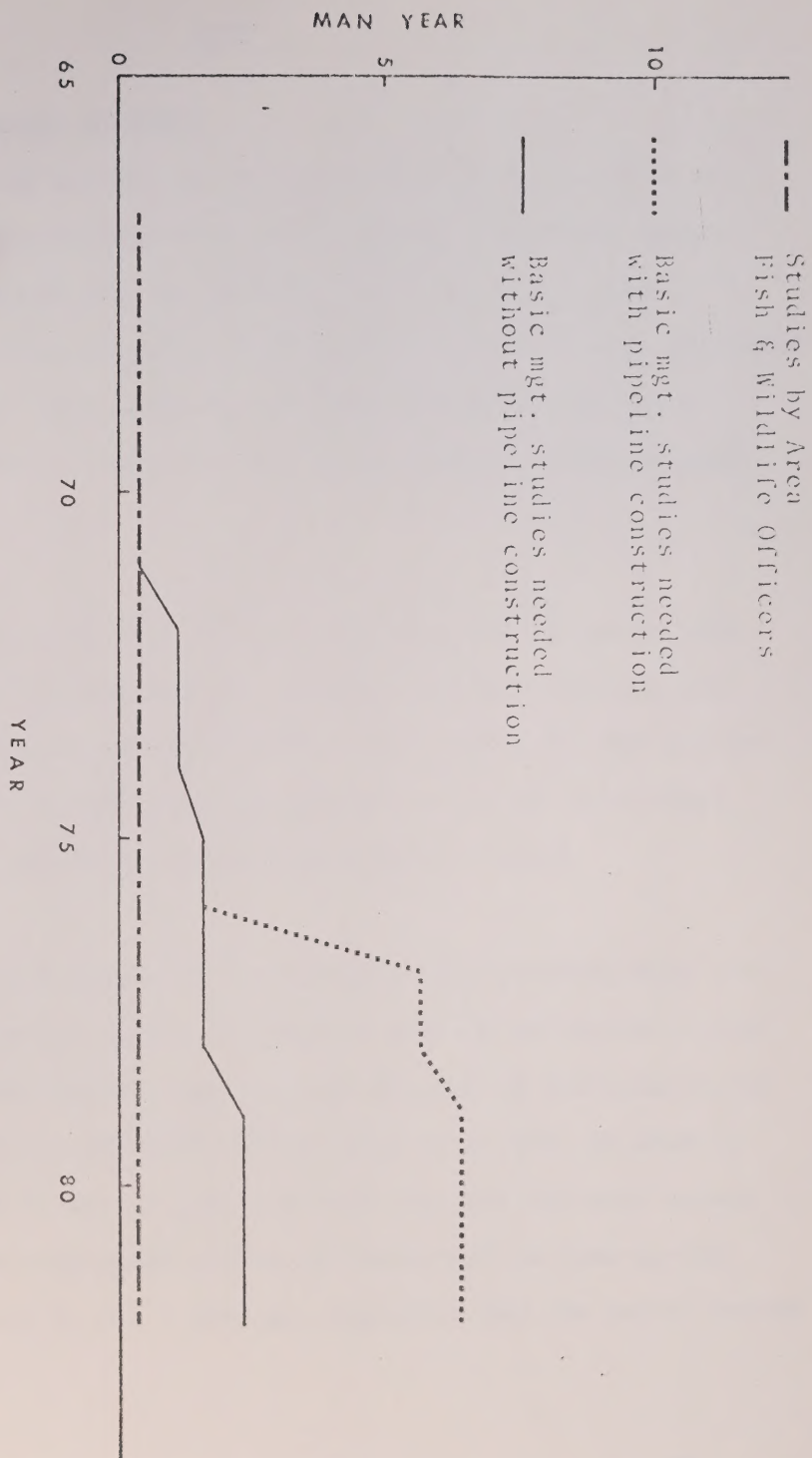


Figure 2. Projection of management study man power requirements for the Fish and Wildlife Service in the Mackenzie River Delta area.

Projection of requirements for FWO's

We made rough guesses of our FWO requirements for the next 8 to 10 years using 1966 (when we were serving mainly native and non-native residents) as a baseline. We assumed that the 1966 ratio of 1 FWO to 650 people permits the FWO to perform adequately while working no more than an acceptable level of 15% overtime. This ratio was then used with total population projections for the Delta to arrive at one set of manpower estimates shown in Fig. 3.

Using the change between 1966 and 1976 as a baseline, similar ratios were calculated correlating the increase in the number of transients with the increase in the workload of the FWO station. These ratios are also plotted in Fig. 3 to determine if they differ significantly from the curve based on total population. All three ratios produce similar curves.

The projected points were plotted for in-migrants and transients using the data in Table IV. Assuming that a 15% overtime load can be handled without difficulty, we can then estimate that our present staff of FWO's should now be 180% of what it was in 1966 (6 FWO's) and still is in 1976, or about 11 FWO's. These figures (6 and 11) were then used with the estimated numbers of in-migrants and the forecasted numbers of transients* to come up with formulae for the points in Fig. 3 that are comparable with the points derived from the 1/650 ratio.

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*We assumed that the number of transients is indicated by the number of Inuvik passenger arrivals on P.W.A.

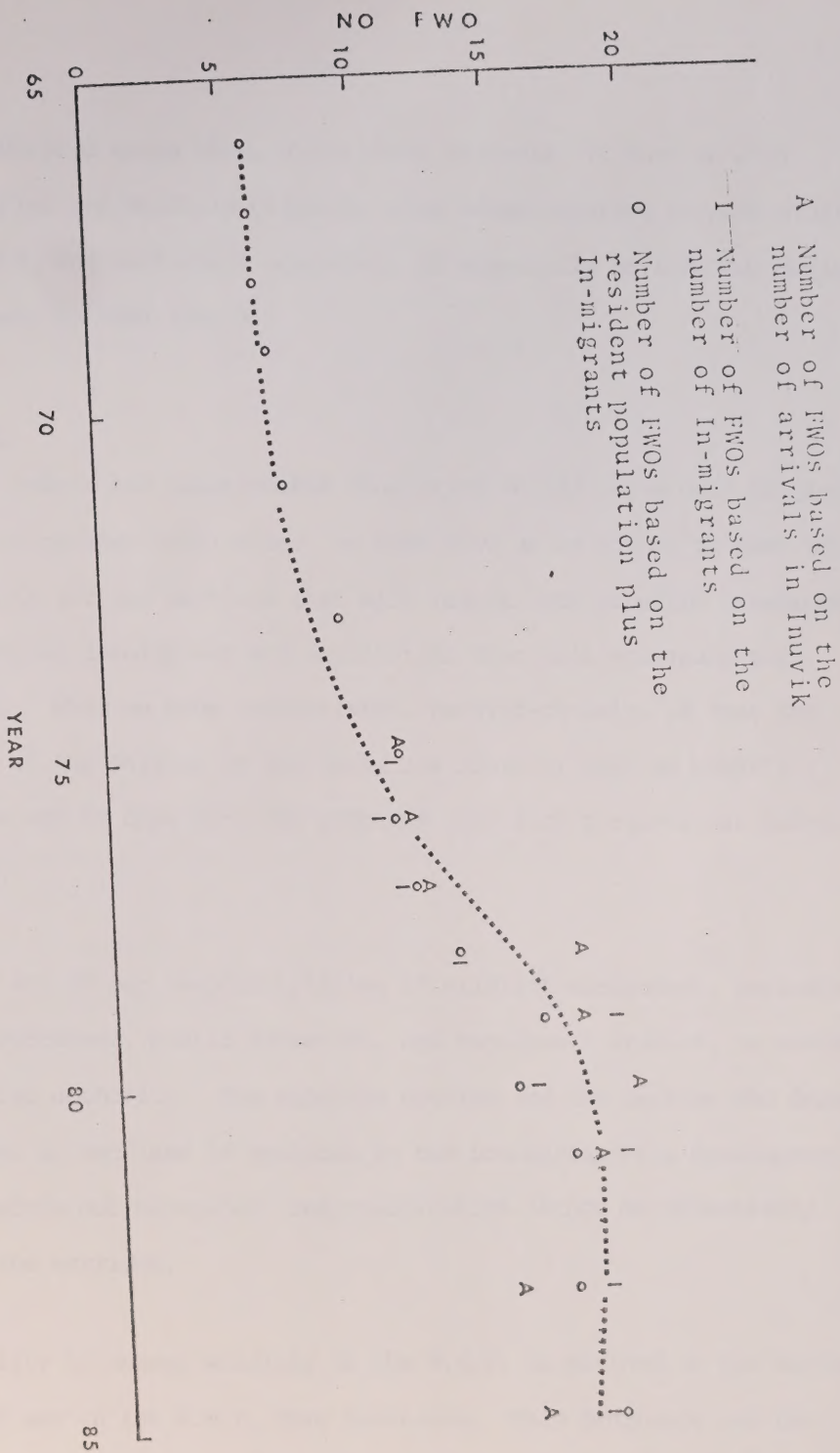


Figure 3. Projection of FWO requirements for the Fish and Wildlife Service in the Mackenzie River Delta area.

Our somewhat educated guess then, using three criteria, is that we will need 15 to 18 Fish and Wildlife Officers, plus administrative support staff, adequate budgets, and sufficient equipment, to adequately perform our duties in the Delta area by 1960 (Fig.3).

Recommendations

The tables and graphs and questionable statistics should serve only to give some scale to an obvious conclusion: we must grow as an agency to meet the increased demands for our services that will result from pipeline construction and all the related development and exploration that will accompany such a giant project. What we have demonstrated, however crudely, is that the rate of growth of our Service in the Mackenzie District must be greatly increased if we are to cope with the problems that such projects are bringing and will bring.

We cannot cede any of our responsibilities of wildlife management, including monitoring, enforcement, public education, and management studies, to another agency or central authority. The wildlife species and the natives who depend upon them cannot be confined or excluded by the boundaries of a development corridor; therefore our management responsibilities cannot be effectively excluded from the corridor.

Our responsibility to manage wildlife in the N.W.T. is defined in the Northwest Territories Act and in the N.W.T. Game Ordinance. This Ordinance and the Game Regulations, which are presently under review, must be altered to reflect the rapidly changing northern scene. A most obvious requirement for change

is to the definition of a "resident" sport hunter as a person who has resided in the N.W.T. for 6 months. We are considering proposing a 2 year residency requirement before a sport hunter can purchase our sport hunting license. Furthermore, our regulations governing the use of firearms in exploration camps, the use of aircraft while hunting (fixed-wing and helicopters), the protection of so-called nuisance wildlife (bears, wolves, foxes), the sale of "trophies" (especially Dall's sheep horns), the wastage of meat, and even the penalties for infractions of our Regulations must be changed to be effective. They are long outdated, obscure, and a source of frustration to our officers and the public alike.

New regulations must be drafted to govern access to wildlife from roads and trails that accompany exploration and development, particularly where roads and trails cross through especially sensitive areas such as alpine and barrenland tundra. Our regulations must be drafted in coordination with the Yukon Territory and the adjacent provinces, since wildlife populations fail to recognize political boundaries. Furthermore, we must become involved with a coordinated environmental management plan in the Mackenzie Valley, rather than the unwieldy scheme in use today.

